59TH CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 216.

ASTORIA HARBOR, OREGON.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORTS OF EXAMINATION AND SURVEY OF ASTORIA HARBOR, OREGON.

DECEMBER 10, 1906.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington, December 8, 1906.

SIR: I have the honor to transmit herewith a letter from the Chief of Engineers, United States Army, dated 6th instant, together with copies of reports from Maj. W. C. Langfitt and Lieut. Col. S. W. Roessler, Corps of Engineers, dated April 4, 1905, and October 6, 1906, of a preliminary examination and survey, respectively, of Astoria Harbor, Oregon, made by them in compliance with the provisions of the river and harbor act of March 3, 1905.

Very respectfully,

WM. H. TAFT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, December 6, 1906.

SIR: I have the honor to submit herewith for transmission to Congress reports of April 4, 1905, and October 6, 1906, by Maj. W. C. Langfitt and Lieut. Col. S. W. Roessler, of the Corps of Engineers, on preliminary examination and survey, respectively, of Astoria Harbor, Oregon, authorized by the river and harbor act of March 3, 1905.

At the time of the preliminary examination it was deemed necessary that a survey be made in order to determine the advisability of under-

taking any improvement of this locality, and a survey was ordered as provided by law.

For the facts and reasons given in the report of October 6, 1906, I concur in the opinion expressed by the district officer, by the division engineer, and by the Board of Engineers for Rivers and Harbors that the harbor of Astoria is not worthy of improvement by the General Government at the present time.

Very respectfully,

A. MACKENZIE,
Brig. Gen., Chief of Engineers, U. S. Army.

The SECRETARY OF WAR.

PRELIMINARY EXAMINATION OF ASTORIA HARBOR, OREGON.

UNITED STATES ENGINEER OFFICE,
Portland, Oreg., April 4, 1905.

GENERAL: In compliance with instructions contained in letter from Office Chief of Engineers, dated March 16, 1905, I have the honor to submit, in duplicate, the following report on the preliminary examination of Astoria Harbor, Oregon, as provided by the river and harbor act approved March 3, 1905.

The city of Astoria is located on the south bank of the estuary of the Columbia River about 12 miles above its mouth, and is a town of about 12,000 inhabitants, and is of considerable importance on account of its large lumbering and fishing interests.

This harbor is one of chief commerical importance on the Pacific coast, the Columbia River being the only port acccessible to deep-draft vessels between Puget Sound and San Francisco Bay, a distance of about 700 nautical miles. The harbor is used as anchorage for inbound and outbound vessels crossing the Columbia River bar, and is therefore of great importance to the entire shipping interests of the Columbia and Willamette rivers.

The estuary of the Columbia River in front of Astoria varies in width from 3½ to 6 miles. In this width there are three channels having sufficient depth for deep-draft vessels, but the south channel constitutes what is properly called Astoria Harbor. That part of the south channel below the Oregon Railroad and Navigation Company's dock is the main ship channel and is the one used by shipping for anchorage. The part of the south channel from the Oregon Railroad and Navigation Company's dock to Tongue Point was until recently also the ship channel for through navigation, but since the new cuts above upper sands and south of Taylor sands were made it is used only by vessels engaged in trading in Astoria. The width of the south channel between the 18-foot contours varies from 350 feet opposite the most easterly addition to Astoria, called Alderbrook, to about 1,000 feet opposite the western limit of McClure's Astoria. West of this limit the channel widens to about 3,200 feet and holds this width to Tansy Point. The extreme depths in the westerly and in the middle portion of this channel in front of Astoria proper, west of the Oregon Railroad and Navigation Company's dock, varies from 25 to 55 feet. East of the Oregon Railroad and Navigation Company's dock to the extreme easterly boundary the depth is about 19

to 22 feet. Immediately north of this channel, in front of Astoria, there are sand bars on which depths from 0 to 6 feet may be found at low water. The area of the south channel, between the 18-foot curves, from Tongue Point to Tansy Point is about 2¼ square miles.

The principal obstruction to navigation exists in the shoalness of the south channel above the Oregon Railroad and Navigation Company's dock, and in the fact that this channel does not run along close to the harbor lines, the intervening space having in places as little as 17 feet at mean low tide. The character of the bottom here, as far as known, is rocky in places.

Between the Oregon Railroad and Navigation Company's dock and the western limit of McClure's Astoria, the channel has sufficient depth, and west of this to Tansy Point, which is the principal sheltered anchorage ground, it has not sufficient depth, and the area of deep water is getting gradually reduced.

The other two channels, the "middle" and "north," are not through channels, the middle channel being now nothing more than a pocket. The north channel is rarely used and then only by small craft.

As the condition of, and the improvement to, Astoria Harbor are questions that should not be considered except as part of the estuary as a whole, the regimen of all parts of which are closely allied and should be studied as a whole before any work of improvement is undertaken, the following data are given of that portion of the Columbia River extending from Three Tree Point to the mouth and which is considered herein as the estuary.

The width of the river opposite Three Tree Point to Cathlamet Point is about 11,500 feet and widens to 48,000 feet at Grays Bay, a distance of 9 miles below. At Tongue Point, 3 miles farther down, it narrows to 22,000 feet. Opposite Point Ellice to Smiths Point, about 5 miles farther down, the width is 20,000 feet. About 4 miles farteer down the width between Fort Stevens and Chinook Point is 17,000 feet.

In the upper part of the estuary, from Three Tree Point to Grays Bay, the cross-section area is largely reduced by numerous large low islands and below Grays Point to Point Ellice by shoals and sand bars. Below Ellice Point the number of bars and shoals decreases.

Between Astoria and Fort Stevens, the area of deep water, with from 24 feet to 70 feet depth at low water, is about 12 square miles, but the lower portion of this area on the south side, and all that portion on the north side, are not used much for anchorage on account of their exposure to storms. This estuary has always been included for purposes of improvement as a portion of work of improving Columbia and lower Willamette rivers.

The portion of Astoria Harbor proper, extending eastwardly from the Oregon Railroad and Navigation Company's dock to the buoy depot, United States Light-House Establishment, at the easterly limit of Astoria, has received a special appropriation under title "Improving mouth of Columbia River, Oregon and Washington, below Tongue Point."

A complete survey of the estuary, including Astoria Harbor, is badly needed, not only on account of any possible improvements that may be required by the latter, but also on account of the ship channel from Portland to the sea, which has to be maintained through

the estuary. It is estimated that this survey will cost approximately $10,000, and it is recommended that it be made.

In view of the fact that this examination would seem to indicate a desire for special work in Astoria Harbor apart from the project for improving Columbia and lower Willamette rivers, it would seem that part of the expense thereof should be met from other appropriations, and it is suggested, unless part of it can be met by an allotment from examinations, surveys, and contingencies, that one-half of the amount can be properly met from the appropriation for improving mouth of Columbia River, Oregon and Washington, below Tongue Point, which work is a large part of Astoria Harbor, and the other half can be met from the appropriation for improving Columbia and lower Willamette rivers.

The estimated cost of a survey of Astoria Harbor proper, including extensive borings in the upper portion to determine the extent and amount of rock removal that would be necessary outside the harbor lines, is approximately $3,000.

In view of the commerce affected, Astoria Harbor is considered worthy of survey to determine plans and cost of improvement and it is recommended that a survey be made.

The estuary is shown on maps 6140 and 6141, being sheets 1 and 2, of the United States Coast and Geodetic Survey, Columbia River.

The following commercial statistics, showing arrivals and clearances of vessels at Astoria, Oreg., were furnished by the collector of customs at Astoria, Oreg., and are for the calendar year 1903, later statistics being not readily obtained at this time:

Vessels.	Coastwise.		Foreign.		Total.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
Arrived	845	1,006,456	66	175,558	911	1,182,014
Cleared	794	908,210	12	16,720	806	924,930
Total	1,639	1,914,666	78	192,278	1,717	2,106,944

Very respectfully, your obedient servant,

W. C. LANGFITT,
Major, Corps of Engineers.

Brig. Gen. A. MACKENZIE,
Chief of Engineers, U. S. A.
(Through the Division Engineer.)

[Sixth indorsement.]

U. S. ENGINEER OFFICE, NORTHERN PACIFIC DIVISION,
San Francisco, Cal., May 8, 1905.

Respectfully forwarded to the Chief of Engineers, United States Army.

I agree with Major Langfitt that Astoria Harbor is worthy of survey from which to formulate plans and make estimates of cost of improvement, and recommend that $3,000 be allotted from appropriation for examinations, surveys, and contingencies of rivers and harbors.

W. H. HEUER,
Colonel, Corps of Engineers,
Division Engineer.

[Eighth indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, D. C., June 14, 1905.

Respectfully returned to the Chief of Engineers, United States Army.

Based on the commercial interests involved, the district officer recommends that a survey be made of Astoria Harbor, with a view to determining plans and cost of improvement. He estimates the cost of a survey, to include borings, at $3,000. The division engineer concurs in the views of the district officer and recommends that an allotment be made for the survey.

It is noted from the table of commercial statistics given herein that the tonnage amounted to 2,106,944 tons in 1903. In the Reports of the Chief of Engineers for a number of years it is stated that the commerce of Astoria is combined with and included in that given for Columbia River below Portland. This total commerce has of late years averaged about 2,300,000 tons. It is not known what part of this tonnage should be credited to Astoria Harbor proper, but it is probable that a large part of it is either directly or indirectly affected by the condition of the channel or anchorage in the vicinity of Astoria.

In the opinion of the Board the commercial interests involved are sufficient to warrant a survey and further investigation as to the needs of navigation. It is therefore recommended that an allotment of $3,000 be made for this purpose. It is further recommended that the district officer be directed to ascertain if possible the amount of commerce that pertains to Astoria Harbor proper, and to state whether the improvement proposed is necessary in the interest of through navigation as well as to the interests centered about Astoria.

For the Board:

D. W. LOCKWOOD,
Lieut. Col., Corps of Engineers,
Senior Member of the Board.

[Ninth indorsement.]

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, June 19, 1905.

Respectfully submitted to the Secretary of War.

This is a report on preliminary examination of Astoria Harbor, Oregon, authorized by the river and harbor act of March 3, 1905.

Under the provisions of section 9 of said act, which specifies that survey and estimate of cost may be made, when deemed necessary to determine the advisability of improvement by the United States, I recommend that a survey of this locality be authorized.

In this connection attention is respectfully invited to the report of the Board of Engineers for Rivers and Harbors, in the preceding indorsement, in which the Board concurs in the recommendation of the district officer and division engineer that a survey and estimates be made.

A. MACKENZIE,
Brig. Gen., Chief of Engineers, U. S. Army.

[Tenth indorsement.]

WAR DEPARTMENT,
June 23, 1905.

Approved as recommended by the Chief of Engineers.

ROBERT SHAW OLIVER,
Assistant Secretary of War.

SURVEY OF ASTORIA HARBOR, OREGON.

UNITED STATES ENGINEER OFFICE,
Portland, Oreg., October 6, 1906.

GENERAL: The river and harbor act approved March 3, 1905, provided for an examination of Astoria Harbor, Oregon. The report of the preliminary examination, dated April 4, 1905, was submitted by Maj. W. C. Langfitt, Corps of Engineers. The survey authorized by letter from the Office of the Chief of Engineers, dated June 27, 1905, has been made and the results thereof have been incorporated in the tracing which is herewith.[a] The report on this survey is as follows:

Astoria contains about 12,000 inhabitants. It is the terminus of several daily steamboat lines to Portland and the home port of a few small vessels running to Ilwaco and Grays River, Washington, and other points on the estuary. The San Francisco-Portland steamships usually stop here to discharge and receive freight and passengers. A steam schooner makes more or less regular trips between Astoria and Tillamook. The principal occupation of the inhabitants is centered in salmon fishing and here are located the principal canneries of the Columbia River. The next most important industry is the manufacture and shipment of lumber. The water-borne traffic which would be benefited by local improvements has not been easy to estimate owing to the insufficient data furnished by shippers. A conservative estimate for the last fiscal year gives a traffic of 89,778 tons freight and 1,807,000 gallons crude oil, valued at $3,398,000.

The wharves of the city are scattered over a distance of nearly 5 miles, from the buoy depot of the Light-House Department on the east to Smiths Point on the west. Most of the wharves are located in a frontage of 2 miles below the dock of the Oregon Railroad and Navigation Company, where the river channel comes close up to the pierhead line, and where the depth of water is sufficient for the largest vessels that come into the Columbia River. Here are located the coal bunkers, steamboat landings, and the principal fish canneries. Here also is carried on 35,600 tons, or 60 per cent of the water traffic of the port.

East of the Oregon Railroad and Navigation Company's dock the wharves are few in number, with long distances between them. Within this section only four wharves are to be considered in connection with deep-water traffic. These are the wharves of the Astoria and Columbia River Railroad, the Clatsop Mill Company, Astoria Box Company, and the Tongue Point Lumber Company. The total tonnage of these wharves, not including that of the Astoria and Columbia River Railroad Company, for which the company could give no reliable data, was 35,600 tons the last fiscal year, valued at

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[a] Not printed.

$1,900,000. This traffic was by seagoing vessels, mostly schooners, carrying lumber to coastwise points. The least depth of water in front of the pierhead line of this section is 19 feet at mean lower low water, or 26.4 feet at average high tide.

Upon request, the transportation committee of the Astoria Chamber of Commerce informed me that the improvements desired are, quoting from its report:

> First. Between Smiths Point and Tansy Point. It should be deepened and broadened so as to admit the safe anchoring, at all stages of tide, the largest vessels which come into the Columbia River. This perhaps is first in importance, and should receive immediate attention.
>
> Second. Channel between wharf of Oregon Railroad and Navigation Company and United States buoy station should be made deeper.
>
> Third. A wider channel is desired off Ninth street.

The improvement first mentioned refers to dredging on a shoal in the main channel below the harbor proper. This shoal is in the main ship channel, and its dredging is regarded as a part of the project adopted by Congress in 1902 for a 25-foot deep-water channel between Portland and the sea. Its deepening for this general navigation is quite independent of the local needs of the harbor of Astoria, and whatever dredging may here be necessary will be paid out of the appropriation for the main river channel. To dredge this area for the purpose of creating an anchorage, as requested by local interests, is not deemed a matter worthy of consideration by the General Government, as there is abundant anchorage to the west of this shoal, though not so near the city.

The dredging desired abreast of Tenth street is not required by local or general commerce, as the channel in that vicinity is over 1,000 feet wide, and therefore of sufficient capacity for vessels going up and down the main channel or to and from the wharves at Astoria. Its only purpose would be to create an anchorage near to the city, where boats could anchor without obstructing general navigation. As there is an anchorage ground one-half mile wide and 3 miles long west of Tongue Point, and within a mile of the wharf front, the need for the creation of an anchorage near the heart of the town is not apparent.

The improvement desired by local interests in the upper 3 miles of the harbor is practically a resumption of the work which was authorized under the project of 1896, and which was discontinued in 1902 because the ship canal, which theretofore had come in close to the line of wharves, as shown by the dotted line, had shifted outstream to the position indicated by the broken line on the map. Under this project appropriations aggregating $121,000 have been made and $96,742.62 expended without beneficial results, owing to the shifting of the channel. An unexpended balance of $24,257.28 remains to the credit of this work, which can be used whenever there is need for deeper water than now exists.

As before stated, the only traffic that need be considered is that carried on at three lumber wharves and the railroad wharves. The vessels engaged in the traffic are mostly coastwise schooners, the largest of which do not draw more than 22 feet loaded. For vessels of this depth the present depths are ample, since the soundings show that there is 19 feet at low tide and 26.4 feet at mean high tide at the shoalest part of the channel in front of these wharves, depths sufficient for most vessels at all stages of the tide and for vessels drawing 24 feet at mean high tide. As there is no apparent reason why vessels

should not leave the wharves at high tide if there is not enough water at low tide, no further deepening of the channel in the interest of present commerce appears necessary. It is to be noted that none of the sawmills mentioned have as yet extended their wharves to the harbor line or utilized to its fullest extent the depth of water that now exists in the channel in front of their wharves.

In view of the foregoing I am of the opinion that the harbor of Astoria is not worthy of improvement by the General Government at the present time.

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Very respectfully, your obedient servant,

S. W. ROESSLER,
Lieut. Col., Corps of Engineers.

Brig. Gen. A. MACKENZIE,
Chief of Engineers, U. S. A.
(Through the Division Engineer.)

[First indorsement.]

U. S. ENGINEER OFFICE, PACIFIC DIVISION,
San Francisco, Cal., October 9, 1906.

Respectfully forwarded to the Chief of Engineers, United States Army.

An examination of the latest survey and the data furnished in the report of the district officer indicates that the channel depths and widths in front of Astoria are ample for all existing commerce, and I am of the opinion that the harbor at Astoria is not at present worthy of further improvement by the General Government.

W. H. HEUER,
Colonel, Corps of Engineers,
Division Engineer.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, D. C., November 17, 1906.

Respectfully returned to the Chief of Engineers, United States Army.

From the within report of the district officer on a survey of Astoria Harbor, Oregon, and a communication [a] from the Astoria Chamber of Commerce, it appears that the following improvements are desired by interested parties at this locality:

A. A deeper and broader channel between Smith Point and Tansy Point; so as to admit the safe anchoring, at all stages of tide, of the largest vessels which come into the Columbia River.

B. A deeper channel between the Oregon Railroad and Navigation Company's wharf and the United States buoy depot.

C. A wider channel off Ninth street.

In the main ship channel of the Columbia River, between Smiths Point and Tansy Point, there exists a shoal area having a minimum depth of about 22 feet at mean lower low water. The improvement of this shoal is included in the existing project for a 25-foot channel from Portland to the sea, and can be undertaken when the necessity becomes apparent. It is therefore eliminated from consideration in connection with the improvement of Astoria Harbor. The widening

[a] Not printed.

of the channel between the points named in order to provide anchorage area would afford some slight convenience to the deeper draft vessels, but is not deemed essential to commerce, because amply deep and commodious areas are already available for anchorage purposes a short distance below.

Under the project of 1896 the channel of the Columbia River followed approximately the direction of the pierhead line between the Oregon Railroad and Navigation Company's wharf and the Tongue Point light-house depot. Since that time it has shifted, and now recedes from the shore obliquely opposite the railroad company's wharf. The improvement desired at this locality is increased depth in front of the wharves on the route of the old channel of the 1896 project. The existing channel depths at low tide are sufficient for the majority of vessels in use, and at high tide for vessels drawing as much as 24 feet. As the vessels employed are mostly coastwise schooners of not exceeding 22 feet loaded draft, such facilities would appear to be ample for the handling of the commerce, of about 35,600 tons annually, pertaining to this part of Astoria Harbor.

The proposed widening of the channel opposite Ninth street is desired to afford additional anchorage area. As stated by the district officer and shown on the accompanying tracing there is ample area for anchorage purposes, both above and below the city. There is no congestion of commerce at Astoria Harbor requiring additional facilities and their provision as a matter of convenience does not appear to be warranted.

In view of the above the Board concurs with the district officer and the division engineer in the opinion that Astoria Harbor is not at present worthy of further improvement by the United States.

Interested parties were invited by the district officer to submit statements to the Board showing the necessity for the proposed improvements. A communication from the Astoria Chamber of Commerce was received and given due consideration.

For the Board:

D. W. Lockwood,
Colonel, Corps of Engineers,
Senior Member of the Board.

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